MFR File No. 20275E29

SUBJECT Jurisdiction at Cargill Napa plant, east side

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The eastern portion of the Cargill Napa Salt Plant is the remnant of the former plant which included areas on both the east and west sides of the Napa River. When Cargill sold the property on the west side to the state, the plant was essentially inactivated. However, the on-site "water-man" still manages (11/94) the eastern portion with the goal of extracting salt from the water still remaining on the eastern part of the plant. He reported (person.comm. to D. Martel) that water is moved regularly, but in no established patterns, to accomplish that goal. Therefore, in reality there is active pumping and changing of valves on the site at this time. (The Corps has requested, but not yet received, documentation on the recent operations of the remnant of the former plant) This presents a difficult challenge to determining jurisdiction.

The CWA does not establish limits of salinity necessary for determining jurisdiction. If the San Francisco District were to judge that waters above a certain salinity were not jurisdictional, we would find that at the next rain event such waters might well become jurisdictional at that moment and stay so only momentarily or stay so for months or years thereafter. Furthermore it is unknown how the entire system would operate if all pumping were stopped and all valves left either open or closed. Many of the pond bottoms are impermeable, and/or below the ground water table, and would therefore stay ponded after the precipitation season for some time even with valves and gates left open, but if all ponds would do so is not known.

The Corps of Engineers regularly claims jurisdiction in areas that are occasionally or seasonally dry. It may be possible for the pumps on site to completely dry out a one or all of the ponds for some period of time. But it is unlikely that all areas could be drained without further site modifications. However, even if each pond could be dried in sequence it does not seem to consistent with CWA jurisdiction to disclaim jurisdiction in them in sequence, as they dry, since the Corps regularly claims jurisdiction over summer-dry pools and lakes.

It would be inconsistent with all former practice by this District to produce a jurisdictional which represents only an instant in time, and that instant one which may never be repeated. The wiser course seems to be to produce a jurisdictional determination which represents some "steady-state" of the site. There is clearly a great lack of appropriate information on what that steady-state would be. Therefore, for the sake of this determination of jurisdiction certain assumptions will be made. They are as follows:

1. It will be assumed that the site in question is no longer an industrial facility. That use has been abandoned.

2. It will be assumed that any active manipulation of the water on the site will not change the CWA jurisdictional delineation.

3. It will be assumed that the bottom elevations of the ponds are below the ground water table, at least in part, or are impermeable.

4. It will be assumed that low waters seen on the aerial photography represent the natural conditions of the wash ponds, since they were subject to frequent additions of water. The current (93) OHW corresponds to some aerial photos.

5. It will be assumed that the current OHW line on the other ponds (other than the wash ponds) represents the natural condition, since no elevational or hydrological data, which could help define natural conditions, is available.

I. 404 JURISDICTION

A. Are the wash ponds exempt "settling ponds"? Cargill has asserted (Washburn letter of August 17, 1993) that the wash ponds are settling ponds and therefore exempt. The preamble, in discussion of Section 328.3, states: "For clarification it should be noted that we generally do not consider the following waters to be "Waters of the United States". However, the Corps reserves the right on a case-by-case basis to determine that a particular waterbody within these categories of waters is a water of the United States. EPA also has the right to determine on a case-by-case basis if any of these waters are "waters of the United States".....(c) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing." Additionally, the regulations at Section 323.2(b), the definition of "lake", say: "As used in this regulation, the term does not include artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water for such purposes as stock watering, irrigation, settling basins, cooling, or rice growing."

1)Were these ponds created by excavation or diking dry land?

a) Nichols and Wright study shows that area was originally tidal wetlands

b) Photo 2-17-40 shows area diked, farmed but with channels thruout

c) Photo 2-29-48 shows the area diked, but still wetland, i.e. ponded in some areas.

d) Taped series of photos (undated, similar to 2-17-40) shows the area farmed but there is a channel running through it and it appears "seasonally wet"

Therefore, the diked land was not dry.

2) Was the area of the wash ponds used as some other type of pond before their use as wash ponds, rather than direct change from farmed land to wash ponds?

a)photo 3-1-58 shows the area entirely ponded, but with no sign of "washing", i.e. no deltas of fill visible

b) photo 7-25-63 is the first photo that shows a small "delta" of material from washing

Even if Cargill maintains that the land was dry, or was dried before CWA and

therefor could qualify for exemption, it apprears that the wash ponds were establish in former salt ponds, wet land, not dry

3) Is the area being "used exclusively for"....(re Preamble exemption)

a) Since the plant is non-operational, the pond is not now being used for washing salt, or any other industrial use.

b) The wash ponds seem to have their major use as an area to hold and recirculate "wash brines", and not for settling, i.e. settling out sediments. The deltas/fans of sediment are relatively small in ratio to the size of the ponds.

c) The wash ponds have been regularly used to hold excess brine or water when extra on-site storage was needed.

d) The OHW survey done by Cargill and provided to the Corps calls the area "former wash ponds"

Therefore the wash ponds are not being used exclusively for settling ponds.

4) Furthermore, the area still ponds with natural precipitation

a) 92 helio photos

b) 93 winter wrack line

c) Lowenthal's statement to Martel, 11/94 that ponds 1/3 full after last storm

5) The bottom elevations of the wash ponds are likely below the water table, and therefore, the ponds would be "natural" without any water additions by human activities.

a) Observation by D. Martel that the northern end of the wash ponds are below the elevation of the tidal waters in the barge cannal.

b) A survey provided by Cargill indicates that...

Therefore, the wash ponds are ponds, but are not exempt "settling ponds"

B. Are the salt ponds (Wash ponds, Brine/Pickle ponds, Crystallizers) "waters". Washburns letter of August 17, 1993 claims that salt ponds are not "waters". First he claims that the liquids in the various ponds are not chemically like water. Then he claims that they have a different freezing and boiling point than water. Thirdly he states that the chemical content is not constant. Then he states that the pond liquids are lacking important life-sustaining elements. And finally he claims that these areas should be classed as "waters" only if they are "life-supporting", and asserts that brine is not "life-supporting".

1) Washburn contends that brines are not chemically like water because of their high salinity.

a) Even at the highest concentration reported (290 ppt for pickle) the

solution is 71% pure water. All of the "liquids" at this site, despite their salinities, are natural sea water or are derived from natural sea water.
b)Sea water is usually considered to be between 30 and 40ppt, however some salt lakes (regulated by the Corps) have higher concentrations of salts, e.g. the Great Salt Lake with concentrations as high as 330ppt.
c)Water (pure H2O) does not exist in any natural situation.
d) The Corps regularly exerts its jurisdiction in waterbodies which are perennially or seasonally hypersaline (e.g. Pyramid Lake, Mono Lake).

2)Washburn states that the freezing and boiling points of the liquids in the ponds differs from water.

a) He compares to distilled (pure) water which is not a naturally occurring liquid.
b) All natural waters have a differing freeze point and boil point from distilled water.
c) This is a direct result of the additional dissolved materials which all natural waters contain in some degree.
d) Freezing point and boiling point changes are not related to CWA jurisdiction.

3) Washburn states: "...unlike seawater, the ratio of the brine's chemical constituents does not remain constant over time but is constantly changing due to evaporation."

a) Constant chemical constituents are not a criteria for CWA jurisdiction. All natural bodies of water exhibit some fluctuations of chemical constituents, some as extreme as these ponds.
b) If Washburn means that as evaporation progresses the ratio of total salts to water changes he is correct. However, this is also true of seawater.
c) If he means that the ratio of the dissolved salts changes, that is true in that some salts (e.g. calcium salts) precipitate out in concentrators. However this is true in natural situations also.
d) Precipitation, as well as evaporation, changes the chemical ratios and concentrations of the salts in the Napa plant ponds.

4) Washburn states: ... brine lacks most of the biological properties (e.g. high oxygen content and nutrients) that are present in seawater as well as the elements that form the basis for life, such as nitrate, phosphate, iron, and manganese.

a) Washburn fails to note that some organisms can exist in an almost totally oxygen-free environment. In fact, a low oxygen content can occur because of a high concentration of organisms whose requirements for oxygen have depleted the environment. All organism need some "nutrients" but nutrient needs differ. Washburn has not provided analytic data on the concentration of oxygen or "nutrients" of brine vs. seawater. Various seawaters have differing concentrations of oxygen and "nutrients".

b) He has also not provided analysis of brines for elements such as nitrate, phosphate, iron, and manganese. These elements sustain some life forms, but only in specific concentrations. At other conentrations they may be toxic to various organisms.
c) There are water-reliant species (avian species in this case) which require aquatic habitats for their life histories, but are not water-dependant, that is they are not dependent upon any particular chemical constituents of said water. Shore-bird resting habitat is an example of such use (see 5f,g, and h, below, for bird use on this site).
d) What ever the constituents of hypersaline waters, the fact is that they are immensely productive biologically.

5) In general, the Corps agrees with Washburn's position that waters which are life-supporting are jurisdictional. The premise of much of the CWA is that we are dealing with waters which provide useful functions for humans and for other life.

a) In general species diversity declines with increasing salinity. However, organic production or standing crop does not necessarily decline, and may increase, especially in summer.
b) Salt tolerant bacteria and green algae survive in concentrated brine up to the point of crystallization. Primary production by these photosynthesizing organisms is the basis of food chains.
c) Brine shrimp and brine flies exist at concentrations of 70 to 200 ppt (210 ppt is the highest reported by Washburn)
d) Fish species exist in salt ponds as high as 84ppt.
e) Some avian species are water reliant, rather than water-dependant, but are critically reliant upon aquatic areas, no mater what the constituents of the water.
f) Ruddy ducks and Shovelers have been noted in south Bay ponds with concentrations as high as 186ppt.
g) Point Reyes Bird Observatory studies at the Napa plant site (90, 91) show occurrances of Avocets, Black-bellied plover, Stilts, Dowitchers, Curlews, Godwits, Willets, Dunlin, Greater yellowlegs, and small sandpipers both in and around the ponds.
h) The same study showed that Avocet, Curlew, Godwit Willet, Black-bellied Plover, and small sandpipers use the crystallizers, the ponds which hold the most concentrated of the brines, the pickle. The count for small sandpipers in one crystallizer was 1600 birds.

6) Generally Washburn's argument seems to be that the Napa plant site is a completely unnatural situation.

a) Time scale must be considered: the Corps regularly claims jurisdiction in seasonal streams, and does not remove that claim of jurisdiction when the water is not flowing; the Corps claims jurisdiction on seasonal wetlands and does not disclaim them during the summer-drought. Therefore the

Corps would claim areas as waters if they contain "life-sustaining" water at some time during the average year.

b) The current phase-out stage masks the natural circumstances of the site. With the plant no longer in production all the liquid in the ponds will be on-site precipitation (ie natural water), containing salts picked up from the sediments in the ponds (see Assumptions above) and will not necessarily be as quoted in Washburn's letter of August 1993.. Given this scenario the ponds may even overflow into the Napa River in years with heavy rains, and this could gradually deplete the sedimentary salts and the solutions in the ponds will become less and less salty over time. It is unknown what concentrations of what salts exist in the ponds currently.

d) Salt was naturally formed on the shores of SF Bay when high tides deposited natural tidal waters in low spots in the tidal marsh. These waters evaporated during the summer-drought, became hypersaline, and eventually precipitated salts. These salt pannes were among the richest habitat for birds, being used as prime feeding areas due to their huge production of invertebrates. Native Americans harvested and traded this salt. Commercial salt production began in SF Bay when the American settlers noticed the natural salt production of the area and enhanced it with more efficient procedures. The T-charts of the Napa plant area show that such natural salt pannes were present in the area that is current salt ponds.

i) The natural production of salt involved natural waters which were progressively made more and more concentrated by evaporation. The dry salt pannes which were formed were a natural feature. The Corps in doing a jurisdictional determination today would not disclaim such areas, even if they were found dry and encrusted by salts at the end of the summer.

ii) The Napa ponds will continue to mimic the natural situation which they replaced: they will pond with natural precipitation, they will become salty (unknown concentrations) from the sediments which remain in them, will provide rich bird-feeding habitat, and they will dry in the summer to salt pannes.

Therefore, the situation at the Napa plant mirrors natural situations.

Therefore the wash ponds are "waters", i.e. they contain life-sustaining liquids which would be recognized in any natural situation as water.

C. Are the ponds "waters of the US"? Waters of the US are defined at 33CFR328.3(a).

1) The first category, "waters which are currently used, or were used in the past,

or may be susceptible to use in interstate or foreign commerce...."

a) the wash ponds were used in the past as part of a process the end material of which was a product of interstate and foreign commerce

2) The fourth category, "impoundments of waters otherwise defined as waters of the United States under the definition."

a) The first category is "...including all waters subject to the ebb and flow of the tide."

b) Salt ponds are currently impoundments of sea water. When all production ceases, however, they will probaly pond only with precipitation or ground water.

3) The preamble in discussion of 328.3 states: "EPA has clarified that waters of the United States ...also include the following waters:"

a) "which are or would be used as habitat by birds protected by Migratory Bird Treaties..." (see B5 f) and g), above)

b) "which are or would be used as habitat by other migratory birds which cross state lines" (see B5 f) and g), above)

c) "which are or would be used as habitat for endangered species.." : while there is no known use by endangered species, minimal restoration efforts could produce good habitat for Clapper rails and SMHM.

Therefore, the ponds are waters of the US

Therefore, the ponds are within Section 404 jurisdiction

D. Wetlands

1) (see Martel memo)

2) All wetlands on the site would be considered adjacent to tidal waters because of their occurance in former tidal areas.

Therefore all the wetlands on the site are waters of the US.

Therfore all wetlands on the site are within Secton 404 jurisdiction.

E. Brine channels

1) Bottoms probably below MSL and/or water table

2) Would pond naturally without human additions of water.

3) Within boundaries of original Bay; no evidence they were constructed in dry land.

4) They have not been used to drain an upland facility.

Therefore not exempt "drainage ditches"

Therefore the brine channels are 404

F. Other areas

1) Levee tops and upper slopes above OHW (inside ponds) or HTL (river side) are not jurisdictional, if they are not wetlands.

2) Central "industrial area" has areas of old fill (pre CWA) and original high ground, therefore not jurisdictional.

3) Levees and other slopes facing river are jurisdictional to HTL.

Therefore unvegetated portions of the levees to HTL/OHW are 404.

II SECTION 10 JURISDICTION

A. Washponds

1) Were there areas within the bounds of the wash ponds which were formerly tidal and below the plane of MHW?

a) One major slough appears to have run through the area which is now the westernmost wash pond.

b) Some slough traces ran thru the areas of the other two wash ponds.

2) Have such areas been filled and/or developed before 1972, or filled with permits after that date.

a) That slough in the western washpond is not visible on current aerial photos and may have been filled in by roads, levees and sediments. However the fill elevations are not known. Fills appear to predate 1972. No known permits for site, except dredge disposal just N and S of barge canal.

b)Slough traces are not clear in photos in the other two ponds, but there is no reason to believe they have been filled by sediments (no fans in areas of former sloughs).

Therfore it is not clear if there is Section 10 jurisdiction in the wash ponds

B. Other Salt Ponds

1) Were there areas within the bounds of the ponds which were formerly tidal and below the plane of MHW?

a) It is clear from the T-charts that there was an extensive network of sloughs throughout all of the salt ponds. Many are still visible in current aerial photos.

2) Have such areas been filled and/or developed before 1972 or filled with permits at a later date than 1972?

a) Crystallizers

i) The crystallizers are prepared by grading and have been graded for many years. So some fill has gone into areas of old tidal sloughs. It is unclear the dates of such activities. There are no known permits for this activity. It may be a technical Section 10 violation.

ii) However, aerial photos show that some of the major slough traces still exist visually.

iii) It is not known to what elevations the remnant sloughs might have been filled.

b) Other ponds

i) There are slough traces visible in all of the other salt ponds.

ii) There is no reason to believe that they have been filled to any extent.

There is Section 10 jurisdiction in most, if not all, of the salt ponds. However without information on the elevations of roads, internal levees, and pond bottoms, it is not possible to delineate that jurisdiction.

C. Wetland areas

1) Were there areas within current wetland boundaries which were formerly tidal and below the plane of MHW?

a) Some wetland areas are in areas that were formerly tidal sloughs.

2) Have such areas since been filled and/or developed before 1972 or filled with permits after that date?

a) There is no elevational data available to show whether the current wetlands are at previous marsh elevations or have experienced some fill. If there has been fill it is not know when it occurred. No permits for fill are known, except for the disposal area just S of the barge canal.

Therefore, it is likely that some areas which are not 404 wetlands have Section 10 jurisdiction also, but without elevational data it is not possible to delineate such areas.

D. Brine channels

1) Are there areas within the footprint of current brine channels that were formerly tidal and below the plane of MHW?

a) Tidal sloughs crossed areas that are now brine channels.

2) Have these areas since been filled and/or developed before 1972 or filled with permits after that date?

b) It is not known how these channels were constructed, i.e. if the area was filled above MHW and then excavated; or if these areas were left and berms build around them. No permits ae known.

Therefore it is not possible to delineate such areas until methods and elevations are available.

E. Other areas

1) Are there any other areas within the Napa plant boundaries that were formerly tidal and below the plane of MHW?

a) Some areas close to the salt stack, and close to the barge channel were formerly below the plane of MHW.

2) Have any such areas been filled and/or developed before 1972 or filled after that date with permits?

a) Some of these areas are not within Section 404 jurisdiction and therefore likely have been filled, and that fill is long-standing, pre-CWA.

b) However the elevation of that fill is not known.

Therefore it is not possible to delineate such areas until more information is available.

Therefore there are extensive areas of the site which are within Section 10 jurisdiction, but without further information it is not possible to produce a precise map of that jurisdiction.

SM 12/20/94